TABLE 1. STEM AND ROOT GROWTH OF *Abies concolor* SEEDLINGS GROWN FOR 1 MONTH IN POTS WITH OR WITHOUT *Ceanothus velutinus* (±ONE STANDARD ERROR).

Treatment	Stem length (cm)	Root length (cm)
Ceanothus	3.3 ± 0.3	2.4 ± 0.2
Control	3.5 ± 0.3	11.4 ± 0.4

the seedlings in control treatments, however, had cotyledons emerged at the end of the experiment (44%) than those in the *Ceanothus* extract treatment (0%). The osmolality of *Ceanothus* extract used in these experiments was 77 ± 1 mOS/kg (about -1.8×10^{-3} MPa). It is unlikely, therefore, that osmotic potential of the solutions affected the results to any great degree.

Discussion. The results of these experiments suggest the possibility of an allelopathic inhibition of radicle growth of *Abies concolor* seedlings by *Ceanothus velutinus.* At least one compound (cinnamic acid), found by Craig et al. (Phytochemistry 10:908, 1971) in the leaves of *C. velutinus* has been implicated as inhibiting seedling growth in some species (Rice, E. L., 1974, Allelopathy, Acad. Press, NY, p. 256). Further experiments are required to isolate the causes of the responses described here and to determine whether extracts of foliage and litter produced under field situations are sufficiently concentrated and persistent to have measurable effects. If responses similar to those described here are observed in the field, *Ceanothus velutinus* may be expected to affect adversely the natural regeneration of *Abies concolor*—especially in dry years or in other situations where rapid root growth could be critical to seedling survival.—SUSAN G. CONARD, Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S.D.A., 4955 Canyon Crest Dr., Riverside, CA 92507. (Received 16 Feb 1984; accepted 30 Oct 1984.)

PITFALLS IN IDENTIFYING *Ventenata dubia* (Poaceae).—The annual Eurasian grass species *Ventenata dubia* (Leers) Coss. & Dur. appears to be expanding its range in the Pacific Northwest, and botanists who may encounter it need to be aware of some pitfalls in making a correct identification of this potential weed. Its occurrence as an adventive species in Idaho and Washington was first reported by Baker (Leafl. Western Bot. 10:108–109. 1964), and it was subsequently described and illustrated by Hitchcock et al. (Vasc. Pl. Pac. N.W. 1:724. 1969). A recent collection from Polk County (*Halse 2857,* 21 Jun 1984, OSC) documents its invasion of the Willamette Valley in western Oregon. The spread of *V. dubia* by human agency may accelerate if it becomes a contaminant of the various crop grasses grown for seed in the Pacific Northwest.

Ventenata is generally considered to be taxonomically allied with *Trisetum* and *Avena* (Hackel, The true grasses, Henry Holt and Co., 1890, p. 121; Bews, The world's grasses, Longmans, Green and Co., 1929, p. 174). The two upper florets of its 3-flowered spikelets are fertile; as commonly occurs in members of tribe Aveneae, these lemmas bear a conspicuous dorsal, geniculate awn. The lowest floret, however, is usually staminate, and its lemma has a straight terminal awn, as is found in various members of tribes Poeae, Brachyeltreae, Stipeae, etc. This floret is incorrectly described as awnless by Gould and Shaw (Grass systematics, Texas A&M Univ. Press, 1983, p. 179) and Hackel (op. cit.). Both glumes are shorter than the first lemma, and disarticulation occurs in the rachilla above the lowest floret.

Because the dorsally-awned florets are shed at maturity and the terminally-awned one is retained within the glumes, this grass is deceptive when presented for identi-

fication in post-mature condition. It convincingly mimics a 1-flowered member of tribes like Stipeae or Eragrosteae, whose genera may have terminally awned lemmas and relatively short glumes. The deception is increased when, as sometimes happens, a caryopsis is formed in the lowest floret. Distinctive features of the species are its conspicuously 7-nerved glumes and smooth, obconical pedicels. Probably the best protection against being fooled by this grass, when it has shed its dorsally-awned fertile florets, is simply to be aware of the problems described here. I hope that this note will save others the several hours I wasted trying to identify this species before serendipitously discovering the cause of the difficulty.—KENTON L. CHAMBERS, Department of Botany and Plant Pathology, Oregon State University, Corvallis 97331. (Received 31 October 1984; accepted 3 December 1984.)

NOTEWORTHY COLLECTIONS

ARIZONA

ANTENNARIA MICROPHYLLA Rydb. (ASTERACEAE).—Coconino Co., San Francisco Mt., ridge between Agassiz and Humphreys Pks., fellfield, 3658 m, 28 Jul 1983, *J. D. Morefield 1563 and C. G. Schaack* (DHA); *Schaack 1182 and J. D. Morefield* (DHA, NY). (Verified by A. Cronquist.)

Significance. New addition to the Arizona alpine. A depauperate specimen of *A. microphylla* may have been the source of McDougall's *A. rosulata* Rydb. report for the Arizona tundra (*Seed plants of Northern Arizona,* Museum of Northern Arizona, Flagstaff, 1973). The presence of *A. rosulata* in the alpine could not be confirmed in the field or herbarium (MNA) and this species should be deleted from Schaack's alpine list (Madroño 30:Suppl., p. 79–88, 1983).

AQUILEGIA CHRYSANTHA Gray (RANUNCULACEAE).—Coconino Co., San Francisco Mt., nne.-facing slope below the knob designated 3685 m (12,089 ft) on the ridge between Agassiz and Humphreys Pks., melt-water channel and alpine meadow, 3612–3627 m, 27 Aug 1983, *C. G. and B. J. Schaack 1167 and J. D. Morefield* (DHA).

Significance. New addition to the Arizona alpine. Though identified here as *A. chrysantha,* "yellow" columbine at highest elevation, ca. 3048 m or above, often has spurs and sepals tinged blue or purple and an overall habit that differs from more typical specimens below.

CAREX HAYDENIANA Olney (CYPERACEAE).—Same site as the *A. chrysantha* collection (above), melt-water channel, ca. 3642 m, 16 Jul 1983, *J. D. Morefield 1580 and C. G. Schaack*; *C. G. and B. J. Schaack 1173 and J. D. Morefield* (DHA).

Significance. New addition to the Arizona alpine.

PINUS FLEXILIS James (PINACEAE).—Coconino Co., San Francisco Mt., ridge between Agassiz and Humphreys Pks., sw.-facing slope, ca. 3627 m, 16 Jul 1983, *C. G. & B. J. Schaack 1175 and J. D. Morefield* (DHA).

Significance. New addition to the Arizona alpine. Only a single depauperate (ca. 30 cm), individual is presently known from this area, growing with rock protection at the upper end of an open extended krummholz. Though protected, the condition of the plant suggests that prolonged survival in this rigorous environment is unlikely. Clark's Nutcracker is known for the area and periodic introduction of Limber Pine seed into the alpine is expected.